

CLAIMS

What is claimed is:

1. An apparatus for providing a custom profile in a wireless device,
2 comprising:
4 a memory into which at least one criterion is entered by a user of
the wireless device;
6 a receiver that receives an audio signal;
a comparator that receives the audio signal from said receiver, and
that receives at least a first of the least one criterion from said memory, wherein said
8 comparator compares the audio signal to the first criterion, and wherein said comparator
outputs at least one result of the comparison; and
10 an adjustor that adjusts the audio signal based on the result of said
comparator.
2. The apparatus of claim 1, wherein the first criterion is a voice profile.
3. The apparatus of claim 2, wherein the first criterion is a voice profile of
2 the user.
4. The apparatus of claim 2, wherein the first criterion is a voice profile for a
2 remote caller to the wireless device.
5. The apparatus of claim 1, further comprising an audio player that plays
2 back the audio signal after the audio signal is received, and again after the audio signal is
adjusted.
6. The apparatus of claim 1, further comprising an audio player that plays the
2 audio signal from a remote caller to the wireless device to the user after the audio signal
is adjusted.

7. The apparatus of claim 1, further comprising an output display that
2 provides feedback to the user of at least one result from said comparator.

8. The apparatus of claim 1, wherein the at least one criterion is
2 understandability.

9. The apparatus of claim 1, wherein the at least one criterion is clarity.

10. The apparatus of claim 1, wherein said adjustor is automated.

11. The apparatus of claim 10, wherein said adjustor is a signal processor.

12. The apparatus of claim 1, wherein the user of the wireless device controls
2 said adjustor.

13. The apparatus of claim 12, wherein the at least one criterion is a filtering
2 combination.

14. The apparatus of claim 13, wherein the filtering combination changes
2 voice characteristics of the user.

15. The apparatus of claim 1, wherein the at least one criterion is variance
2 from a pre-determined normal value.

16. The apparatus of claim 1, wherein the at least one criterion is
2 recognizability.

17. The apparatus of claim 1, wherein the at least one criterion is entered by
2 the user of the wireless device.

2 18. The apparatus of claim 1, wherein the at least one criterion is sent to the
wireless device from a remote caller to the wireless device.

19. The apparatus of claim 1, wherein said memory is a RAM.

2 20. The apparatus of claim 1, wherein the at least one criterion is entered by
the user pressing a key to select an audio filter.

2 21. The apparatus of claim 1, wherein the at least one criterion is entered by
the user selecting a previously adjusted audio signal configuration for the adjustor.

2 22. The apparatus of claim 1, wherein said receiver includes a mouthpiece of
the wireless device.

2 23. The apparatus of claim 1, wherein said receiver includes an antenna of the
wireless device.

2 24. The apparatus of claim 1, wherein said comparator comprises a digital
processor.

25. The apparatus of claim 1, wherein said adjustor is a filtering system.

2 26. The apparatus of claim 1, wherein the first criterion is clarity of at least
one consonant pronunciation.

2 27. The apparatus of claim 1, wherein the first criterion is compensation for a
hearing deficiency of the user.

2 28. The apparatus of claim 1, wherein the first criterion is compensation for a
hearing deficiency of a remote caller.

29. The apparatus of claim 1, wherein the first criterion is at least one stored
2 recognition template.

30. The apparatus of claim 29, wherein said adjustor runs the audio signal
2 through free-form voice modification filtering to heighten understandability and reduce
variance from the at least one stored recognition template.

31. The apparatus of claim 29, wherein the stored recognition template is a
2 user desired speech profile.

32. The apparatus of claim 29, wherein the result is a percent variance of the
2 audio signal from the stored recognition template.

33. The apparatus of claim 32, wherein the percent variance is assigned a
2 single word rating.

34. The apparatus of claim 32, wherein the comparator generates a plurality of
2 percent variances for a plurality of audio signals, which plurality of percent variances
forms a multi-word rating.

35. The apparatus of claim 34, wherein the multi-word rating is a cumulative
2 rating.

36. The apparatus of claim 34, wherein the multi-word rating is an averaged
2 rating of the single word ratings corresponding to each of the plurality of percent
variances.

37. The apparatus of claim 32, wherein the percent variance is a statistical
2 comparison of voice characteristics in the audio signal and of the first criterion.

38. The apparatus of claim 37, wherein the voice characteristics are at least
2 one selected from the group consisting of frequency content and frequency location.

39. The apparatus of claim 29, wherein each stored recognition template
2 corresponds to a key on a keypad of the wireless device.

40. An apparatus for providing a custom profile in a wireless device,
2 comprising:

a memory into which at least one criterion is entered by the user;

a receiver that receives an audio signal;

a means for comparing that receives the audio signal from said
6 receiver, and that receives at least a first of the least one criterion from said memory,
wherein said means for comparing compares the audio signal to the first criterion, and
8 wherein said means for comparing outputs at least one result of the comparison; and

a means for adjusting that adjusts the audio signal based on the
10 result of said means for comparing.

41. A method of modifying an audio profile in a wireless device, comprising
2 the steps of:

entering, by a user of the wireless device, of a first criterion;

4 comparing an audio signal received by the wireless device to the first
criterion;

6 adjusting the audio signal based on said comparing; and

8 playing the adjusted audio signal to the user, or broadcasting the adjusted
audio signal to a remote caller.

42. The method of claim 41, wherein said adjusting is performed
2 automatically by the wireless device.

43. The method of claim 41, wherein said adjusting is performed by filtering
2 the audio signal.

2 44. The method of claim 41, wherein said comparing is performed by a signal processor.

2 45. The method of claim 41, wherein said adjusting is responsive to an input from the user of the wireless device, and wherein the input from the user is based on at least one result of said comparing.

2 46. The method of claim 45, further comprising the user receiving the at least one result of said comparing by providing of feedback to the user, the feedback being of at least one result of said comparing.

2 47. The method of claim 46, wherein said providing of feedback is performed by displaying an icon to the user on a display screen of the wireless device.

48. The method of claim 41, wherein the criterion is understandability.

49. The method of claim 41, wherein the criterion is clarity.

2 50. The method of claim 41, wherein the criterion is variance from a pre-determined normal value.

51. The method of claim 41, wherein the criterion is recognizability.

2 52. The method of claim 41, wherein said adjusting comprises boosting a particular frequency of the audio signal.

2 53. The method of claim 52, wherein an upper frequency is boosted to improve clarity of at least one consonant pronunciation.

2 54. The method of claim 52, wherein the particular frequency is boosted to compensate for a hearing deficiency of the user.

2 55. The method of claim 52, wherein the particular frequency is boosted to
compensate for a hearing deficiency of the remote caller.

2 56. The method of claim 41, wherein said comparing comprises evaluating the
audio signal against at least one stored recognition template.

2 57. The method of claim 56, wherein said evaluating comprises running the
audio signal through free-form voice modification filtering to heighten understandability
and reduce variance from the at least one stored recognition template.

2 58. The method of claim 56, wherein the stored recognition template is a user
desired speech profile.

2 59. The method of claim 56, wherein said evaluating comprises statistically
comparing, and assigning a percent variance of the audio signal from the stored
recognition template.

2 60. The method of claim 59, wherein the percent variance is assigned a single
word rating.

2 61. The method of claim 59, wherein said evaluating is repeated for a plurality
of audio signals, thereby assigning a plurality of percent variances, which plurality of
percent variances forms a multi-word rating.

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2 62. The method of claim 61, wherein the multi-word rating is a cumulative
rating.

2 63. The method of claim 61, wherein the multi-word rating is an averaged
rating of the single word ratings corresponding to each of the plurality of percent
variances.

2 64. The method of claim 59, wherein the percent variance is calculated by
statistically comparing voice characteristics.

2 65. The method of claim 64, wherein the voice characteristics are at least one
selected from the group consisting of frequency content and frequency location.

2 66. The method of claim 56, wherein each stored recognition template
corresponds to a key on a keypad of the wireless device, further comprising the user
selecting one stored recognition template before said comparing.

2 67. The method of claim 41, further comprising delaying, between said
entering and said playing, to allow for prevention of sound interaction between the user
entering by speaking, and the user playing by playing back a recording of said entering.

2 68. A method of modifying an audio profile in a wireless device, comprising
the steps of:

- 4 (a) recording an audio signal;
- 6 (b) playing back the audio signal to a user of the wireless device;
- (c) polling the user to selectively apply filtering to the played back
audio signal;
- (d) filtering the audio signal according to said polling of the user;
- 8 (e) playing back the filtered audio signal to the user;

- 10 (f) repeating steps (c)-(e) until the user elects, upon said polling, to
retain a then current filtering configuration, which then current filtering configuration
comprises the audio profile; and
- 12 (g) applying the audio profile to a subsequent audio signal.

70. The method of claim 69, wherein the user selectively applies filtering by
2 pressing a numbered key on the wireless device.

71. The method of claim 70, wherein the numbered key corresponds to a pre-
2 stored speech template.

72. The method of claim 69, wherein the audio signal is an incoming audio
2 signal to the wireless device from a remote caller.

73. The method of claim 69, wherein the audio signal is an outgoing audio
2 signal from the wireless device to a remote caller.

74. The method of claim 69, wherein the subsequent audio signal is an
2 outgoing audio signal from the wireless device to a remote caller.